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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,708	02/14/2002	Paul A. Kline	CRNT-0067	8383

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EXAMINER	
LEE, BENJAMIN C	
ART UNIT	**PAPER NUMBER**
2632	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/075,708	KLINE, PAUL A.	
	Examiner	Art Unit	
	Benjamin C. Lee	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-67,69-81 and 84-109* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *61-63 and 92-94* is/are allowed.

6)☒ Claim(s) *64-67,69-81,84-91 and 95-109* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02/3/04, 10/1/04, 10/18/04, 11/15/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response To Amendment

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/7/04 has been entered.

Claim Status

2. **Claims 61-67, 69-81 and 84-109** are pending.

Claim Rejections - 35 USC § 103

3. **Amended claims 64-67, 69-70, 74-75, 80 and 95-106** are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutinho (US pat. #5,777,769) in view of Cern (US pat. #6,452,482).

1) In considering claims 64-67, 69-70 and 74-75:

a) Coutinho discloses a communication device for communicating data over a power line, comprising: a coupler (3) to be communicatively coupled to the power line (26); a communications node (24) communicatively coupled to said coupler and comprising a fiber optic transceiver (inherent from the figure for 2-way communication of col. 1, lines 8-10) communicatively coupled to a fiber optic cable (18) that is communicatively configured to be communicatively coupled to a remote transceiver that is not communicatively coupled to a

power line (inherent from the figure whereby the remote data source as indicated by trunk 14 is separate from the power line and whereby a transceiver at the remote location is inherently present for communicating the signals to/from the optical fiber 18);

while:

b) Cern teaches the use of data modem and router coupled to a power line via a coupler in a power line communication system for modulating/demodulating and routing communications data/signals (Figs. 1 & 12), whereby the coupler could be in the form of an inductive coupler or capacitive coupler as alternatives (1535 of Fig. 15 and 1102 of Fig. 12).

In view of the teachings by Coutlinho and Cern, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that in order to provide effective communication, transmission/reception of modulated/demodulated signals that provide data integrity and noise/interference prevention using a known modem such as taught by Cern can be used in the communications node such as taught by Coutlinho. For multiple reply stations communication as is intended by Coutlinho, a router as taught by Cern can be used for multiple destination/source communication by monitoring usage data to direct communication in use to proper respective destinations. Either a well-known specific inductive or capacitive coupling such as taught by Cern can be used for implementing the coupler of unspecified-type in a system such as taught by Coutlinho and Cern without unexpected results.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the system of Coutlinho and Cern is applicable or adaptable to power lines of greater than 1000 volts, whereby if adaptation is required, obvious high voltage and/or high current handling measures well known in the art would be utilized.

The 2-way communication implemented by the coupler, the modem, the fiber optic transceiver, fiber optic cable and remote transceiver in the digital data communication system of Coutlinho and Cern meet the claimed various coupling, demodulating/modulating, and transmitting/receiving steps of the various data/signals in which transmitted/received signals over the fiber optic cable are necessarily analog data signals.

2) In considering claim 80, Coutlinho and Cern render obvious all of the claimed subject matter as in the consideration of claim 67.

3) In considering claims 95-97, Coutlinho and Cern render obvious all of the claimed subject matter as in claim 64, whereby:

Cern discloses that the communication system using the modem is configured to communicate over the power line via a wideband signal (col. 1, lines 32-37; col. 11,lines 20-21; col. 20, lines 49-50; col. 21, lines 13-27) using at least one carrier frequency of abut fifty megahertz (col. 6, lines 3-5 and col. 21, lines 13-27) and can use various modulation and corresponding demodulation schemes (col. 18, lines 1-3 and col. 21, lines 13-27).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the system of Coutlinho and Cern such that the modem is configured to be able to communicate a wideband signal comprising at least one carrier frequency of about 50 megahertz and using known modulation as taught by Cern to provide communication of good signal-to-noise ratio and increased data bandwidth by virtue of using such wideband signal of such carrier frequency and known modulation, and to use an orthogonal frequency division multiplexing modulation known for compatibility with wide band and high data rate communication as the specific choice of modulation.

4) In considering claims 98-100, Coutlinho and Cern render obvious all of the claimed subject matter as in claim 67, plus the consideration of claims 95-97, respectively.

5) In considering claims 101-103, Coutlinho and Cern render obvious all of the claimed subject matter as in claim 70, plus the consideration of claims 95-97, respectively.

6) In considering claims 104-106, Coutlinho and Cern render obvious all of the claimed subject matter as in claim 80, plus the consideration of claims 95-97, respectively.

4. **Amended claims 71-73** are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutlinho, Cern. and Toppeto (US pat. #4,263,549).

1) In considering claims 71-73, Coutlinho and Cern made obvious all of the claimed subject matter as in claim 70, including:

Cern teaches magnetic torroid cores configured as a split core of two halve with mechanical package provided to mate the core halves accurately and fasten the core to the power line for installation without undesired cutting (col. 8, lines 62-67); while:

Toppeto teaches that inductively coupling transformer can take the form of toroid shape coil/core and furthermore that in order to promote easy mechanical attachment/removal of the transformer coupler to a cable, a hinged housing is used (col. 2, lines 5-7 and col. 3, lines 27-45). In view of the teachings by Coutlinho, Cern and Toppeto, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a hinged type toroidal transformer such as taught by Toppeto as a specific form of inductive coupler in a system such as taught by Coutlinho and Cern, and for ease of mechanical attachment; furthermore, magnetically permeable cores and dielectric materials have been well known for use in a transformer to attain the desire inductive/magnetic characteristics and to provide for its housing support.

5. **Amended claims 76-79, 81, 84-85, 89-91 and 107-109** are rejected under 35 U.S.C. 103(a) as being unpatentable over Coutlinho in view of Cern and Summerhayes (US pat. #4,070,572).

1) In considering claims 76-79, Coutlinho and Cern made obvious all of the claimed subject matter as in claim 70, while:

--Summerhayes teaches in an electrically operated transmitter device coupled to a power line the use of an inductive power coupler for providing power for its components (107, 106 and "transmitter" of Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that power for operating the power line communication device components including the transceiver and modem in a system such as taught by Coutlinho and Cern can be provided in a known way such as taught by Summerhayes, whereby when the communication device components operate in DC power, an obvious AC-DC converter is used.

2) Regarding claims 81, 84 and 91, Coutlinho, Cern and Summerhayes made obvious all of the claimed subject matter as in the consideration of claims 70 & 77.

3) In considering claims 89-90, Coutlinho, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claims 74-75.

4) Regarding claim 85, Coutlinho, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claim 64.

5) In considering claims 107-109, Coutlinho, Cern and Summerhayes render obvious all of the claimed subject matter as in claim 81, plus the consideration of claims 95-97, respectively.

6. **Amended claims 86-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Coutlinho, Cern, Summerhayes and Toppeto

1) Regarding claims 86-88, Coutlinho, Cern and Summerhayes made obvious all of the claimed subject matter as in claim 81, plus the consideration of claims 71-73 further in view of Toppeto.

Allowable Subject Matter

7. **Claims 61-63 and 92-94** are allowed.

Response to Arguments

8. Applicant's arguments with respect to claims 64-67, 69-81, 84-91 and 95-109 have been considered but are moot in view of the new ground(s) of rejection. See above rejection for full detail, whereby new use/combinations of previously cited prior art are relied upon. Claims 61-63 and 92-94 have been allowed and therefore arguments directed to them need not be addressed.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Rumbaugh, US pat. #6,275,144.

--Discloses known use of orthogonal frequency division multiplexing in power line wideband communication (col. 1, lines 35-39).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin C. Lee
Primary Examiner
Art Unit 2632

B.L.